What is claimed is

1. A method for high throughput screening of plant growth regulators comprising the steps of culturing photomixotrophic cells to which candidates for plant growth regulators were added and measuring cell growth on a large scale at the same time.

2. The method as set forth in claim 1, wherein the photomixotrophic cells are *Marchantia polymorpha* L. photomixotrophic cells or *Nicotiana tabacum* cv. BY4 photomixotrophic cells.

3. The method as set forth in claim 1, wherein the candidates for plant growth regulators are selected from a group consisting of synthetic compounds, natural compounds, plant extracts and fractions or extracts containing microorganism culture solutions.

4. The method as set forth in claim 1, wherein the culture is carried out in microwell plates.

5. The method as set forth in claim 1, wherein the cell growth measurement is carried out by measuring optical density after treating 2,3,5-

triphenyltetrazolium chlorolide to culture cells.

6. The method as set forth in claim 1, wherein the method comprises the following steps:

1) Culturing photomixotrophic cells in a microwell plate to which candidates for plant growth regulators are added;

2) Treating 2,3,5-triphenyltetrazolium chlorolide thereto;

3) Reacting thereof by adding ethanol after removing solutions from the microwell plate;

4) Transferring the reacting solution of the above step 3) into a new microwell plate; and

5) Measuring optical density of the microwell plate of the above step 4) with a high throughput screening reader.

7. The method as set forth in claim 6, wherein the step 3 is carried out by treating 2,3,5-triphenyltetrazolium chlorolide for 4.5-5.5 hours, removing solutions from microwells, adding 95% ethanol thereto, and then reacting thereof at 60℃ for 1 hour.